

US EPA RECORDS CENTER REGION 5



497635

8/83

EMERGENCY ACTION PLAN

U.S. DRUM DISPOSAL CORPORATION

CHICAGO, ILLINOIS

Prepared For:

U.S. Environmental Protection Agency  
Region V  
536 South Clark Street  
Chicago, Illinois

Contract No.: 68-01-6669

TDD# 5-8306-25

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## 1.0 SITE HISTORY

The U.S. Drum site is located in a heavily industrialized area on Chicago's south side (Figure 1). This site and the adjacent areas had been used as a dump for municipal and industrial wastes as early as the 1940s. These activities have since raised the site to a level approximately 10 feet above the original ground surface.<sup>1</sup>

On 25 January 1979, the Illinois Environmental Protection Agency (IEPA) received information from Charles Grigalauski of the U.S. Environmental Protection Agency's (U.S. EPA) Air and Hazardous Material Division about the existence of a potential hazardous waste site in Chicago, Illinois. Subsequent to receiving this information, Mr. Bob Wengrow of IEPA conducted an initial inspection of the site on 15 March 1979. At this time, U.S. Drum was an active waste transfer facility run by Mr. Steve Martell. It contained an estimated 6 to 8 thousand 55-gallon barrels, three bulk liquid trucks, and approximately 20 to 30 semi-trailers setting on-site.

Further research by the IEPA indicated that approximately 6,000 drums had been left on-site by the previous owner of the site, Mr. Anthony Tellis. Mr. Tellis operated a waste transfer and solvent recovery facility at this site until a fire occurred on 4 July 1975. Mr. Martell took over operation at the site soon after the fire. The location of Mr. Tellis is not presently known.

On 10 April 1979, U.S. Drum was served with a Temporary Restraining Order (TRO) prohibiting the acceptance or removal of any material at the site. The TRO was issued because of numerous violations of the state's environmental protection laws. Examples of such violations included the operation of a waste management site without permits and the direct discharge of wastes into the environment. (Information gathered from an IEPA inspection conducted on 4 April 1979 is contained in Appendix 1. The non-inclusive list provides a general idea of the materials on-site at this time).

On 9 May 1979 and 1 August 1979 legal actions were taken against Mr. Martell and U.S. Drum Disposal Corporation in the form of Orders of the Cook County Circuit Court (No. 79 CH 1915). These court orders stipulated actions to be taken by U.S. Drum to mitigate the conditions at the site. Examples of the actions included but were not limited to:

- o Marking and disposing of on-site drums.
- o Constructing a berm around those drums left on-site.

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<sup>1</sup> Illinois State Geological Survey report (12-2-80) to Mary Schroeder of the Illinois Environmental Protection Agency







- o Obtaining a permit from IEPA to operate a waste management facility.

A second, and presently ongoing, legal proceeding against U.S. Drum is a quo warranto action to oust the U.S. Drum Corporation from the state franchise.

In response to the court orders Mr. Martell arranged for the removal of drums which he had brought on-site. During the period of October through December of 1979, approximately 341,000 gallons of liquid and semi-solid wastes were removed from the site and disposed of either at EWR or at Paxton Landfill in Chicago, Illinois. Subsequent to the removal of this material, the remaining or "Tellis" drums were consolidated into areas which were then surrounded with earthen berms. The ground between these consolidation areas was then covered with 6 to 8 inches of clay.

Since those actions taken by Mr. Martell in late 1979, no further clean-up activities have been conducted. Periodic sampling and inspections have been conducted by IEPA; the inspections have noted the continuing deterioration of the on-site drums. In terms of legal proceedings, the State Attorney General has been discussing a potential settlement with Mr. Martell for the past year and a half. There now exists an informal agreement between the State and Mr. Martell for the surface clean-up of the U.S. Drum site.

## 2.0 SITE DESCRIPTION

The U.S. Drum site is located in the northeast 1/4 of the northwest 1/4 of the southeast Section 24, T.37 N., R.14 E., in the City of Chicago, Cook County, Illinois. The dimensions of the site are approximately 800 feet north-south by 300 feet east-west (See Figure 2). The site is bordered by a gravel access road to the north, by a double set of Norfolk and Western railroad tracks to the east, and by open fields directly to the south and west. On a larger scale, the site is adjacent to several industrial operations including the inactive Wisconsin Steel mill to the east, the Alburn Incinerator to the west and the Paxton #1 Landfill to the northwest. The homes nearest to the site are located 0.5 mile to the north (8 homes) and 0.5 mile to the south (1 home).

As indicated earlier, the site has been filled to approximately 10 feet above the original ground surface. The surface material as it now exists on the site is thought to be silty clay. It was estimated that there are between 1700 and 1750 drums on the surface. The drums, most of which are standing on end, are stacked in random groups as shown in Figure 2. Each group of drums is surrounded by a low earthen berm varying in height from 1.5 to 2.5 feet. The number of drums per grouping ranges from 5 to 370. The entire site is surrounded by a slightly larger berm approximately 3 feet high.





8-8-83 *SS*

A hand-drawn map of a coastal area, possibly a bay or harbor, enclosed by a dashed line representing the shoreline. The map includes several labeled features and elevation points:

- LOADING DOCK:** A rectangular structure located near the top center, with an elevation of **150** above it.
- BOX TRAILER:** A rectangular structure located in the center, with an elevation of **335'** below it.
- TANKER:** A rectangular structure located at the bottom left, with an elevation of **110** above it.
- Elevation Points:**
  - 370:** Located at the top right.
  - 30:** Located below the loading dock.
  - 60:** Located to the right of the box trailer.
  - 290:** Located on the left side.
  - 255:** Located on the right side.
  - 150:** Located at the bottom right.
- Shaded Areas:** Large areas of the map are filled with horizontal hatching, representing land or specific terrain types.

**NORFOLK & WESTERN RAILROAD**

\* Represents the approximate number of drums within each respective bermed area.

Figure 2 - Site Map



The drums, many of which have been on-site since at least 1976, are severely deteriorated (See Appendix 2). At least half of the drums do not have lids, and many are bulged and leaking. Suspected contents of the drums include: solvents, paint wastes, tar wastes, resin, corrosives, and cyanide. IEPA inspection reports and aerial photos indicate that large portions of the site are often covered with an estimated 4 to 6 inches of standing water. This condition further accelerates drum deterioration and may advance the migration of contaminants from leaking drums.

Only four on-site samples have been taken to date and analyses of the samples were incomplete. A more extensive program of soil and surface water sampling and analysis is needed to accurately assess the magnitude and extent of contamination at this site. This need is further supported due to the existence of reports indicating that on-site pits were used to dispose of liquid wastes. IEPA personnel report having seen children on and near the site; apparently the Norfolk and Western railroad tracks are frequently used by area children as a throughway and source of recreation. In addition, the area is known to attract area hunters. One drum in the north central portion of the site appears to have been shot and is leaking its contents onto other drums and the ground below.

### **3.0 RECOMMENDED ACTIONS**

The proposed Emergency Action measures prescribed in this plan are designed to remove or lessen direct human exposure and fire and explosion threats which presently exist at the U.S. Drum Site. Further, this plan assumes that more extensive remedial actions will not be necessary to secure this site. (This is based on the assumption that buried drums will not be found through the remote sensing survey described in Section 3.4.)

Specific elements of this Emergency Action Plan are listed below in the order in which each action can be undertaken:

- o Take aerial photograph of site.
- o Stage, sample, and dispose of all drums on the surface of the site.
- o Sample surface and subsurface soils.
- o Remove and treat standing water.
- o Conduct remote sensing (geophysical) survey.

Solid wastes would include any material which could not be pumped from drums including materials such as resins, powders and paint sludges. Following compatibility testing, these drums can be opened and their contents mixed with fly ash in a 20 cubic yard rolloff box. Disposal costs are based upon two assumptions the first of which is that 100 cubic yards of fly ash weighs 100 tons and that this material will adequately solidify the waste. The second assumption is that final disposal costs are \$50 per ton of waste.

Incompatible and/or high hazard waste will be overpacked and sent to a secure landfill. Disposal costs are based upon a conservative estimate of \$35 per drum.

The resulting 1,665 empty drums will be crushed and landfilled. It is estimated that five 30 cubic yard dump trucks can remove all of the crushed drums. The box trailer will be removed after the drums are removed. The tanker will be sampled and emptied (if appropriate) and then removed from the site. \*

### 3.3 Sampling

Subsequent to the removal of the drums, a sampling program should be initiated to determine the extent and magnitude of soil, sediment, and water contamination. Approximate locations for the proposed samples are presented in Figure 3. If closer inspection of the site grounds reveals areas which are highly suspected of being contaminated, it may be desirable to relocate sampling points. Consequently, final selection of sampling points should be done after removing all drums and after conducting a comprehensive site inspection.

Analysis of subsurface soils will provide information on the extent of migration of chemical contaminants into the ground. This sampling activity will also indicate the degree of contamination of the soils beneath the existing clay cover. Off-site samples of surface water and pond sediments will indicate lateral migration of contaminants.

The following chart outlines the number of samples which should be taken and the type of analyses which should be performed. Note that both organic and inorganic analyses will be performed on the contents of the of the tanker if it contains any material.

	<u>Organic</u>	<u>Inorganic</u>
Surface Water	4	4
Soil	6	6
Subsurface Soil	10	10
Pond Sediments	3	3
Tanker (if applicable)	1	1

### **3.4 Removal and Treatment of Standing Water**

Prior to the geophysical survey all standing water on the site should be removed. Based upon sample results obtained from the previous stage, proper treatment and disposal alternatives may be formulated. The volume of ponded water within the site boundaries will vary according to recent weather conditions. For purposes of this action plan it is assumed that between 50,000 and 500,000 gallons of water will have to be removed and that the water can be discharged into a local wastewater treatment facility without pretreatment.

### **3.5 Remote Sensing/Geophysical Survey**

A geophysical survey of the entire site should be conducted to ensure that drums and/or chemical containers are not buried on-site. Appropriate instruments will be selected at the time of the survey and will depend upon variables such as distance to interfering structures (e.g. railroad tracks) and geologic features of the area. If the study indicates the presence of buried iron, test trenches will be dug with a backhoe to confirm the presence of drums. Further, if waste-containing drums are found, a determination will have to be made regarding their excavation and removal. This Action Plan is based on negative findings by the geophysical survey.

### **3.6 Construction of a Clay Cap**

Encapsulation of the site with a clay cap is necessary to control rain-water infiltration and resultant migration of chemical contamination. The cap thickness should be 8-9 inches of compacted clay and an additional 6 inches of topsoil. After the topsoil layer is spread, a vegetative cover should be established.

Approximately 240,000 square feet of surface area would be covered by a cap totaling 15 inches thick. It is estimated that 240,000 cubic feet or 8,900 cubic yards of clay is needed for the first layer assuming 25% reduction in volume due to compaction of the clay. The topsoil layer will not be compacted and will require 120,000 cubic feet or 4,440 cubic yards of soil. Cost estimates for the cap are based on the assumption that 1,000 cubic yards of cover can be hauled, dumped, spread, and when appropriate, compacted per day.

### **3.7 Groundwater Monitoring (Optional)**

Groundwater monitoring wells should be installed after completion of the clay cap but before vegetation efforts are initiated. Installation of the wells fulfills two functions: 1. obtaining water samples for chemical analysis; and, 2. obtaining borings for characterization of the site's soil and geology.

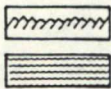
### **3.8 Site Security**

Site security should be maintained at all times to protect both the public from exposure to chemical contaminants and the equipment being left on-site during the removal. A final step of this proposed action should be the posting of warning signs around the site to discourage



U.S. DRUM  
CHICAGO, ILLINOIS

EARTHEN BERMS  
STANDING WATER



8-8-83



ACCESS ROAD

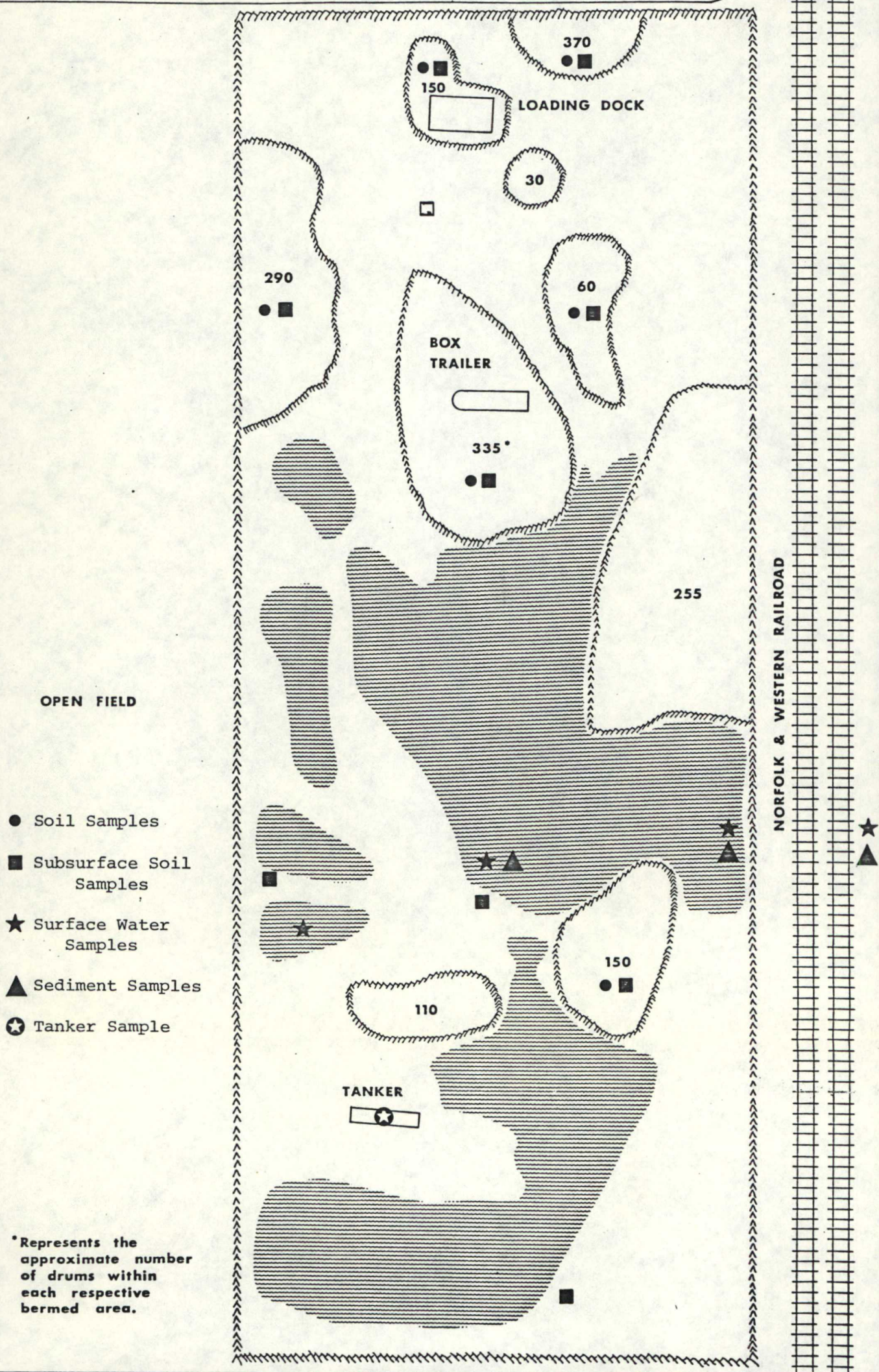


Figure 3 - Sampling Scheme



the public from trespassing on the property. The cost for these activities is based upon:

1. One on-site guard working an eight-hour night shift for the duration of the clean-up; and
2. Using 6 large metal signs, on signposts, at strategic locations on the site's perimeter.

#### 4.0 IMMEDIATE REMOVAL COSTS

##### 4.1 Aerial Photograph

The aerial photograph is to be taken by the Environmental Monitoring System Laboratory, U.S. EPA, Las Vegas. Scale: 1" to 25'

	<u>Total (\$)</u>
Standard Fee	<u>1,500.00</u>
TOTAL	1,500.00

##### 4.2 Removal and Disposal of Drummed Waste

This includes staging, opening, and characterizing drummed waste then bulking where possible, sampling and finally disposing of all wastes.

###### 1) Labor

	<u>Cost Per Day (\$)</u>	<u># of Days</u>	<u>Total (\$)</u>
1 Supervisor (\$45/hr.)	360.00	20	7,200.00
1 Foreman (\$32/hr.)	256.00	20	5,120.00
2 Technicians (\$20/hr.)	320.00	20	6,400.00
1 Chemist (\$35/hr.)	280.00	20	5,600.00
1 Operator (\$20/hr.)	160.00	20	3,200.00
2 Laborers (\$20/hr.)	320.00	20	<u>6,400.00</u>
Subtotal			33,920.00

###### 2) Travel

	<u>Per Diem (\$)</u>	<u># of Days</u>	<u>Total (\$)</u>
1 Supervisor	55.00	20	1,100.00
1 Foreman	55.00	20	1,100.00
2 Technicians	55.00	20	1,100.00
1 Chemist	55.00	20	1,100.00
1 Operator	55.00	20	1,100.00

2 Laborers	55.00	20	<u>1,100.00</u>
		Subtotal	6,600.00
<u>3) Equipment</u>			
	<u>Cost Per Day (\$)</u>	<u># of Days</u>	<u>Total (\$)</u>
2 Backhoes w/Sling or Grappler (\$60/hr.)	480.00	20	9,600.00
1 Bobcat (\$30/hr.)	240.00	20	4,800.00
1 6000 Gallon Tank Truck (\$34/hr.)	272.00	20	5,440.00
1 Drum Crusher	280.00	20	5,600.00
1 Drum Opener or Spike	50.00	20	1,000.00
2 Rolloffs (20 yd <sup>3</sup> )	15.00	20	600.00
1 Portable Decon Unit	185.00	20	3,700.00
1 Chemical Transfer Pump	150.00	20	3,000.00
1 Mobile Command Post	300.00	40	<u>12,000.00</u>
		Subtotal	45,740.00
<u>4) Materials</u>			
			<u>Total (\$)</u>
100 Cubic Yards of Flyash @\$5/yd <sup>3</sup>			500.00
Disposable Protective Equipment @ \$250/day			5,000.00
85 Overpacks @ \$100 each			<u>8,500.00</u>
		Subtotal	14,000.00



	<u>Cost Per Load (\$)</u>	<u># of Loads</u>	<u>Total (\$)</u>
<u>5) Disposal</u>			
a) 875 drums of liquid waste bulked, removal and incinerated			
Transportation - Included in equipment costs			
Disposal (4,800 gallons per load and \$0.15 per lb.)	5,760.00	10	57,600.00
b) 790 drums of solid waste bulk, mixed with flyash and removed to a landfill			
Transportation (2 hrs. x \$50/hr.)	100.00	14	1,400.00
Disposal (20 tons x \$50/ton)	1,000.00	14	14,000.00
c) 85 drums of incompatible or high hazard waste			
Transportation (8 hrs. x \$50/hr.)	400.00	2	800.00
Disposal (Approximately 42 drums per load and \$35 per drum)	1,487.50	2	2,975.00
d) 1665 empty crushed drums removed to a landfill			
Transportation (2 hrs. x \$50/hr.)	100.00	5	500.00
Disposal (333 drums per load; 40 lbs. per drum; \$50/ton)	333.00	5	1,665.00

e) Analysis of bulk liquids and solids (1 sample per load)	500.00	24	12,000.00
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Subtotal			90,940.00
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TOTAL			191,200.00
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#### 4.3 Sampling

<u># of Priority Pollutant Scans</u>	<u>Cost Per Sample(\$)</u>	<u>Total (\$)</u>
24	1,000.00	24,000.00
TOTAL		24,000.00

#### 4.4 Removal and Treatment of Standing Water

Because the volume of water varies with immediate weather conditions, a low and a high estimate is costed-out below. Each estimate assumes that the water can be taken to a local wastewater treatment plant and discharged at no cost.

##### 1) Low Estimate (50,000 gallons of water)

###### a) Equipment

	<u>Cost Per Day(\$)</u>	<u># of Days</u>	<u>Total(\$)</u>
1 Vac-truck (\$45/hr.)	360.00	2	720.00
TOTAL			720.00

##### 2) High Estimate (500,000 gallons of water)

###### a) Equipment

	<u>Cost Per Day(\$)</u>	<u># of Days</u>	<u>Total(\$)</u>
4 6,000 gallon Tank Trucks (\$45/hr.)	360.00	12	<del>7,200.00</del> 1,440.00
1 Chemical Transfer Pump	150.00	5	750.00
Subtotal			7,950.00

###### b) Labor

2 Laborers (\$20/hr.)	160.00	5	1,600.00
Subtotal			1,600.00
TOTAL			9,550.00

#### 4.5 Remote Sensing/Geophysical Survey

Cost of the survey per day includes travel time, per diem for the operator, all labor costs, equipment rental, and report generation.

<u>Cost of Survey</u> <u>Per Day (\$)</u>	<u># of Days</u>	<u>Total (\$)</u>
1,000.00	5	<u>5,000.00</u>
TOTAL		5,000.00

#### 4.6 Construction of a Clay Cap

These estimates are based on the ability to both find a local clay and top soil source and to transport 1,000 cubic yards of material per day.

##### 1) Equipment

	<u>Cost Per</u> <u>Day (\$)</u>	<u># of Days</u>	<u>Total (\$)</u>
1 Compactor (\$60/hr.)	480.00	9	4,320.00
2 D6 Bulldozers (\$45/hr.)	720.00	14	10,080.00
1 D9 Bulldozer (\$60/hr.)	480.00	14	6,720.00
6 Dumptrucks (\$45/hr.)	2,160.00	14	30,240.00
1 Tractor w/Disc and Seeding Gear (\$60/hr.)	480.00	3	<u>1,440.00</u>
Subtotal			52,800.00

##### 2) Labor

	<u>Cost Per</u> <u>Day (\$)</u>	<u># of Days</u>	<u>Total (\$)</u>
1 Supervisor (\$45/hr.)	360.00	14	5,040.00
1 Operator for Seeding (\$25/hr.)	200.00	3	<u>600.00</u>
Subtotal			5,640.00

##### 3) Materials

	<u>Total (\$)</u>
Seed for Revegetation	2,500.00
Subtotal	<u>2,500.00</u>
TOTAL	60,940.00



#### 4.7 Groundwater Monitoring (Optional)

The installation of monitoring wells is posed as an optional activity. Estimates are based on installation of 25-foot wells.

<u># of wells</u>	<u>Cost of Wells per foot (\$)</u>	<u>Total (\$)</u>
4	25.00	<u>2,500.00</u>
TOTAL		2,500.00

#### 4.8 Site Security

Estimate for warning signs includes cost of installation.

##### 1) Security Guard

<u>Cost Per Day (\$)</u>	<u># of Days</u>	<u>Total (\$)</u>
100	40	<u>4,000.00</u>
Subtotal		4,000.00

##### 2) Warning Signs

<u># of Signs</u>	<u>Cost Per Sign (\$)</u>	<u>Total (\$)</u>
6	50.00	<u>300.00</u>
Subtotal		300.00
TOTAL		4,300.00

# SUMMARY OF COSTS

	<u>(\$)</u>
Aerial Photograph	1,500.00
Removal and Disposal of Drummed Waste	191,200.00
Sampling	24,000.00
Removal and Treatment of Standing Water:	
- Low Estimate	720.00
- High Estimate	9,550.00
Remote Sensing/Geophysical Survey	5,000.00
Construction of a Clay Cap	60,940.00
Post Warning Signs	4,300.00
EPA and Technical Assistance Team	<u>33,800.00</u>
o Subtotal using low estimate for removal of standing water	323,960.00
o + 15% Contingency	<u>48,595.00</u>
<u>TOTAL</u>	<u>372,555.00</u>
o Subtotal using high estimate for removal of standing water	332,790.00
o + 15% Contingency	<u>49,920.00</u>
<u>TOTAL</u>	<u>382,710.00</u>
* Cost excluding Groundwater Monitoring:	
o Subtotal using low estimate for removal of standing water	321,460.00
o + 15% Contingency	<u>48,220.00</u>
<u>TOTAL</u>	<u>369,680.00</u>
o Subtotal using high estimate for removal of standing water	330,290.00
o + 15% Contingency	<u>49,545.00</u>
<u>TOTAL</u>	<u>379,835.00</u>

APPENDIX 1

MATERIAL AND GENERATORS INDICATED ON LABELLED  
BARRELS AT THE U.S. DRUM SITE ON 4 APRIL 1979



GENERATORS\*

Armak Chemical  
Ashland Chemical  
Chemtron  
Cyanamid  
DeSoto  
Detrex Chemical  
Diamond Shamrock  
Du Pont  
Eastman Kodak  
Franklin Oil Corp.  
H.B. Fuller  
General Electric  
General Mills

IMC Chemical Group  
Inmont  
IPI Printer Inks  
Lilly Industries  
Mead Johnson Co.  
Nashua Corp.  
Olin  
Parker Co.  
PPG Industries  
Sun Chemical  
Union Carbide  
Uniroyal  
Cargill  
Enterprise Paint

MATERIAL IN LABELLED BARRELS\*

Sodium Methylate  
Flammable Solvents  
Heavy Sludge  
Freon Fluorocarbon  
Propyl Alcohol  
Ferro Hydrogen Cyanide  
Mullinchrodt  
Inks  
5% KFeCN, 2.5% AlOH, 5% KSO<sub>4</sub>, 2.5% NaOH, 85% H<sub>2</sub>O  
Trichloroethylene  
Pigment  
Toluene Diisocyanate  
Toluene Chloroform  
Silicones  
Nonionic Surfactant

\* Noninclusive List

APPENDIX 2

PHOTOGRAPHS OF U.S. DRUM SITE  
TAKEN ON 26 JULY 1983





1,2 Waste-containing drums which do not have lids.







3. View of approximately one-half of the site looking north.



4. View of south east section of site looking south. Note ponded water.





5. Drums at north end of the site looking west. Note Alburn Incinerator in distance.



6. Drums at north end of site looking west. Note leaking drums on third tier and resulting pool on ground.





7,8 Severely deteriorated drums and pallets.







9. Loading dock with bulging and deteriorating drums. Note waste on the top and sides of loading dock.



10. Semi-trailer containing drums.





11. Area where ponded water has seeped into the ground or evaporated.



12. View looking north showing drums in standing water. Note discoloration of water and water lines on drums.